

Applied Physics B Lasers and Optics

Founded by H.K.V. Lotsch

**Volume B 63
1996**

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Printers: Universitätsdruckerei H. Stürtz AG, Würzburg
Printed in Germany © by Springer-Verlag, Berlin, Heidelberg 1996



Springer

PHYSICS AND ASTRONOMY CLASSIFICATION SCHEME (PACS)

Shortened version for use in classifying papers for Applied Physics

General

- 02 Mathematical methods in physics
- 06 Measurement science and metrology
- 07 Specific instrumentation
 - 07.60 Optical instruments and techniques, detection of radiation
 - 07.65 Optical spectroscopy and spectrometers
 - 07.75 Mass spectrometers and mass-spectroscopy techniques
 - 07.80 Electron and ion microscopes and spectrometers; techniques
 - 07.85 X-ray and gamma-ray instruments and techniques

Atomic and molecular physics

- 32 Atomic spectra and interactions with photons
- 33 Molecular spectra and interactions of molecules with photons
- 34 Atomic and molecular collision processes and interactions
- 35 Experimentally derived information on atoms and molecules
- 36 Studies of special atoms and molecules (macro- and polymer molecules, clusters)

Fundamental areas of phenomenology (including applications)

- 41 Electricity and magnetism
- 42 Optics (*see also* 78)
 - 42.10 Propagation and transmission in homogeneous media
 - 42.20 Propagation and transmission in inhomogeneous media
 - 42.30 Optical information, image formation and analysis
 - 42.40 Holography
 - 42.50 Quantum optics
 - 42.55 Laser processes
 - C Pumping mechanisms
 - E Molecular gas lasers (CO_2 , CO, N_2O , formaldehyde)
 - G Excimer lasers
 - H Atomic, ionic, and other gas lasers
 - M Laser action in liquids and organic dyes
 - P Laser action in semiconductors
 - R Laser action in solid-state lasers
 - T Free-electron lasers
 - 42.60 Laser systems and laser-beam applications
 - B Design of specific laser systems
 - D Laser resonators, cavities, and amplifiers
 - E Laser beam deflection and focusing
 - F Laser beam modulation, mode locking, and tuning
 - 42.65 Nonlinear optics
 - 42.68 Atmospheric optics
 - 42.70 Optical materials
 - 42.80 Optical devices, techniques, and applications (including fiber and integrated optics)
- 43 Acoustics (*see also* 62)

Fluids, plasmas, and electric discharges

- 52 Physics of plasmas and electric discharges

Condensed matter: structure, mechanical and thermal properties

- 61 Structure of liquids and solids; crystallography (*for surface structure, see* 68.35; *for thin-film structure, see* 68.55)
 - 61.10 Determination of structures
 - 61.12 Neutron determination of structures
 - 61.14 Electron determination of structures
 - 61.16 Other determination of structures
 - 61.20 Liquid structures
 - 61.30 Liquid crystals
 - 61.40 Amorphous and polymer materials, glasses
 - 61.70 Defects in crystals
 - 61.80 Radiation damage and other irradiation effects
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- 63 Lattice dynamics and crystal statistics
- 64 Phase equilibria, and phase transitions
- 65 Thermal properties of condensed matter
- 66 Transport properties of condensed matter (nonelectronic)
 - 66.30 Diffusion and ionic conduction in solids

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- 68.15 Liquid thin films
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- 68.65 Layer structures, intercalation compounds, and superlattices: growth, structure, and nonelectronic properties
- 68.70 Whiskers and dendrites: growth, structure, and nonelectronic properties

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 - 81.10 Methods of crystal growth and purification
 - 81.15 Methods of thin-film deposition
 - Z Laser deposition methods
 - 81.40 Treatment of materials and its effect on microstructure and properties
 - Z Laser machining
 - 81.60 Corrosion, oxidation, and surface treatments
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Evaluated and abstracted for PHYS on STN

Applied Physics A

Materials Science & Processing

Founded by H.K.V. Lotsch

**Volume A 63
1996**

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Printers: Universitätsdruckerei H. Stürtz AG, Würzburg
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